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AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
# 4, 7TH MAIN MALLESWARAM, BANGALORE -3
Certificate No.: TC-5548

Format No: CP/TF/01

# TEST REPORT OF PHYSICAL REQUIREMENTS OF BRICKS

| | | |
|---|---|---|
| Lab ID | : | CP-2021-01-06-14 Date: 12-10-20 |
| Project Name | : | Improvements to Roads and Drains at Yelahanka Old Town SC/ST area and AD colony and surrounding areas in Ward No. 02 of Yelahanka Sub division |
| Agency | : | M/s. Technical Manager (West), KRIDL, Bangaluru, 5th Block, 17th Main Shivakumar Swamy Building, Bhashyam Circle Bangalore: 560010 |
| Customer's Reference | : | BBMP/EE/YNK.D/W.O/153/2019-20 |
| Date of Receipt | : | 05-10-20 |
| Identification Mark on Brick | : | Wire Cut Brick |
| Reference to BIS codes | : | IS 1077 : 1992(RA 2011) Common Burnt Clay Building Bricks-Specification<br>IS 3495 (Part 1 to 3) : 1992(RA 2011)<br>Method of Tests Burnt Clay Building Bricks<br>Part 1:Determination of Compressive Strength, (Cl 4.2.3)<br>Part 2:Determination of Water Absorption,(Cl 4.1.3)<br>Part 3: Determination of Efflorescence, (Cl 4) |
| Date of test | : | 05-10-20 |

## COMPRESSIVE STRENGTH

| Sl.No. | Length (mm) | Breadth (mm) | Area ($mm^2$) | Failure Load (KN) | Compressive strength of individual bricks ($N/mm^2$) | Acceptablity as per IS 1077:1992, Clause 7.1 |
|---|---|---|---|---|---|---|
| 1 | 228.13 | 109.98 | 25090 | 206.7 | 8.2 | The bricks shall have a minimum average compressive strength for various classes as given in Table 1 of IS 1077: 1992. The compressive strength of any individual bricks shall not fall below the minimum compressive strength specified for the corresponding class of brick by more than 15%. |
| 2 | 228.98 | 108.62 | 24872 | 197.6 | 7.9 | |
| 3 | 231.01 | 107.99 | 24947 | 201.3 | 8.1 | |
| 4 | 230.11 | 107.54 | 24746 | 199.5 | 8.1 | |
| 5 | 228.16 | 106.98 | 24409 | 194.6 | 8.0 | |
| Average of 5 bricks | | | | | 8.1 | |

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# TEST REPORT OF CEMENT CONCRETE CUBES

CP-2021-01-06-14

Date: 24/02/2020

: Improvements to Roads and Drains at Yelahanka Old Town SC/ST area and AD colony and surrounding areas in Ward No. 02 of Yelahanka Sub division

: M/s. Technical Manager (West), KRIDL, Bangaluru, 5th Block, 17th Main Shivakumar Swamy Building, Bhashyam Circle Bangalore: 560010

: BBMP/EE/YNK.D/W.O/153/2019-20

: 19-02-20

: Cement Concrete Pavement

: 150X150X150 mm

: M30 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 24/02/2020

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cement Concrete Pavement | M30 | 17/02/2020 | 24/02/2020 | 150.99 X 149.12 X 151.74 | 22516 | 8.267 | 578.4 | 25.7 | 25.6 |
| 2 | Cement Concrete Pavement | M30 | 17/02/2020 | 24/02/2020 | 151.85 X 150.43 X 151.40 | 22842 | 8.923 | 612.9 | 26.8 | |
| 3 | Cement Concrete Pavement | M30 | 17/02/2020 | 24/02/2020 | 149.54 X 150.66 X 150.80 | 22529 | 8.541 | 547.3 | 24.3 | |

The results obtained are satisfactory as per standard requirements.

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FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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****End of Report****

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| Lab ID | : | CP-2021-01-06-14 **Date: 31-01-20** |
| Project Name | : | Improvements to Roads and Drains at Yelahanka Old Town SC/ST area and AD colony and surrounding areas in Ward No. 02 of Yelahanka Sub division |
| Agency | : | M/s. Technical Manager (West), KRIDL, Bangaluru, 5th Block, 17th Main Shivakumar Swamy Building, Bhashyam Circle Bangalore: 560010 |
| Customer's Reference | : | BBMP/EE/YNK.D/W.O/153/2019-20 |
| Date of Receipt | : | 28-01-20 |
| Sample Type | : | 40mm down size coarse aggregate |
| Reference to BIS codes | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| Date of test | : | 28-01-20 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 215 | 215 | 1.4 | 98.6 | 90-100 |
| 3 | 20 mm | 7455 | 7670 | 51.1 | 48.9 | 30-70 |
| 4 | 10 mm | 4266 | 11936 | 79.6 | 20.4 | 10-35 |
| 5 | 4.75 mm | 2844 | 14780 | 98.5 | 1.5 | 0-5 |
| 6 | Pan | 220 | 15000 | 100.0 | 0 | --- |

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